

TRANSMITTAL LETTER TO THE UNITED STATES

DESIGNATED/ELECTED OFFICE (DO/EO/US)

CONCERNING A FILING UNDER 35 U.S.C. 371

Attorney's Docket Number

05725.0473

U.S. Application No.

09/380888

International Application. No.

International Filing Date

Priority Date Claimed

PCT/FR98/00423

March 4, 1998

March 14, 1997

Title of Invention:

VAPORIZABLE GELLED COMPOSITION

Applicant(s) For DO/EO/US:

Christine DUPUIS

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
- a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
- b. ☒ has been transmitted by the International Bureau.
- c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
- a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
- b. ☐ have been transmitted by the International Bureau.
- c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
- d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
- ☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☐ Other items or information:
- a. ☐ Verified Small Entity Statement.
- b. ☐ Copy of Notification of Missing Requirements.

17. [X]. The following fees are submitted:

<b>Basic National Fee (37 CFR 1.492(a)(1)-(5)):</b>	
Search Report has been prepared by the EPO or JPO.....	\$840.00
International preliminary examination fee paid to USPTO (37 CFR 1.482).....	\$670.00
No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)).....	\$760.00
Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....	\$970.00
International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4).....	\$ 96.00

CALCULATIONS

ENTER APPROPRIATE BASIC FEE AMOUNT = \$ 840.00

Surcharge of \$130.00 for furnishing the oath or declaration later than [ ] 20 [ ] 30 months from the earliest claimed priority date (37 CFR 1.492(e)).

Claims	Number Filed	Number Extra	Rate	
Total Claims	36 -20=	16	X \$18.00	\$ 288.00
Independent Claims	4 - 3=	1	X \$78.00	\$ 78.00
Multiple dependent claim(s) (if applicable)			+\$260.00	\$

TOTAL OF ABOVE CALCULATIONS = \$1,206.00

Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28)

SUBTOTAL = \$1,206.00

Processing fee of \$130.00 for furnishing the English translation later than [ ] 20 [ ] 30 months from the earliest claimed priority date (37 CFR 1.492(f)).

TOTAL NATIONAL FEE = \$1,206.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31).

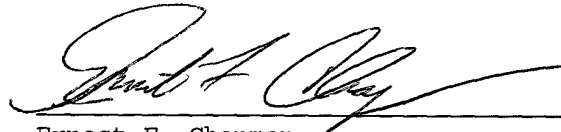
\$40.00 per property + \$  
TOTAL FEES ENCLOSED = \$1,206.00

Amount to be refunded \$  
charged \$

- a. [X] A check in the amount of \$1,206.00 to cover the above fees is enclosed.
- b. [ ] Please charge my Deposit Account No. \_\_\_\_\_ in the amount of \$\_\_\_\_\_ to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. [X] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 06-0916. A duplicate copy of this sheet is enclosed.

The Commissioner is hereby authorized to charge any other fees due under 37 C.F.R. §1.16 or §1.17 during the pendency of this application to our Deposit Account No. 06-0916.

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Submitted: September 13, 1999

PATENT

Attorney Docket No. 05725.0473-00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re National Stage of International )  
Application No. PCT/FR98/00423 )  
Christine DUPUIS )  
Serial No.: Unassigned ) Group Art Unit: Unassigned  
PCT Filed: March 4, 1998 ) Examiner: Unassigned  
National Stage Entry: September 13, 1999 )  
For: VAPORIZABLE GELLED )  
COMPOSITION )

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to the examination of this application, please amend the application as follows:

IN THE SPECIFICATION:

Page 4, line 24, delete "[ $\text{-CO-A-CO-O-(CH}_2\text{CH}_2)_n\text{-}]$ " and replace with

--  $\text{-CO-A-CO-O-(CH}_2\text{CH}_2\text{O)}_n\text{-}$  --.

Page 5, line 22, delete " $\text{-CO-A-CO-O-(CH}_2\text{CH}_2)_n\text{-OH}$ " and replace with

--  $\text{-CO-A-CO-O-(CH}_2\text{CH}_2\text{O)}_n\text{-OH}$  --.

Page 21, line 12, delete "sodium dimethyl sulphonate" and replace with

--sodium dimethyl isophthalate-5 sulphonate--.

**IN THE CLAIMS:**

Please cancel claims 1 to 17, without prejudice or disclaimer, and add new claims 18 to 53 as follows:

--18. A topical composition comprising an aqueous gel which comprises a hydrophilic gelling material, wherein said gel has rheological properties comprising:

- an initial viscosity  $V_0$  ranging from 3000 to 50,000 Pa.s, wherein said initial viscosity  $V_0$  is stable up to a shear strain  $C_1$ ,
- a viscosity  $V_2$  after shear at a strain  $C_2$ , wherein a ratio of  $V_0/V_2$  is greater than or equal to 1000, and
- a difference of  $C_2-C_1$  is less than or equal to 100 Pa.

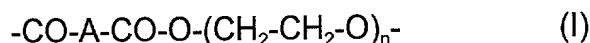
19. The composition according to Claim 18, wherein the rheological properties of said gel further comprise a viscosity  $V_1$  measured at said shear strain  $C_1$ , wherein a ratio of  $V_0/V_1$  is less than or equal to 2.

20. The composition according to Claim 18, wherein said shear strain  $C_1$  is greater than or equal to 50 Pa.

21. The composition according to Claim 18, wherein a fall in viscosity induced by shear on said gel is not immediately reversible.

22. The composition according to Claim 18, wherein said hydrophilic gelling material is a hydrophilic gelling polymer.

23. The composition according to Claim 22, wherein said hydrophilic gelling polymer is chosen from at least one water-soluble and water-dispersible terephthalic copolyester oligomer comprising dicarboxylate repeating units of formula (I):



wherein

- A is chosen from 1,4-phenylene and sulfo-1,3-phenylene groups, and optionally, 1,3-phenylene groups,

- n ranges from 1 to 4,

- at least 35 mol% of said units of formula (I) are units of formula (I)

wherein A is a 1,4-phenylene group and n is equal to 1,

- at least 7 mol% of said units of formula (I) are units of formula (I)

wherein A is a sulfo-1,3-phenylene group, and

- the weight-average molecular mass of said at least one copolyester oligomer is less than 20,000 polystyrene equivalents, as measured by gel permeation chromatography in dimethylacetamide containing  $10^{-2}$  N of LiBr, at 100°C.

24. The composition according to Claim 23, wherein up to 20% of said units of formula (I) are units of formula (I) wherein A is a 1,3-phenylene group.

25. The composition according to Claim 24, wherein up to 5% of said units of formula (I) are units of formula (I) wherein A is a 1,3-phenylene group.

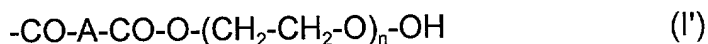
26. The composition according to claim 23, wherein at least 40 mol% of said units of formula (I) are units of formula (I) wherein A is a 1,4-phenylene group and n is equal to 1.

27. The composition according to claim 26, wherein from 40 to 90 mol% of said units of formula (I) are units of formula (I) wherein A is a 1,4-phenylene group and n is equal to 1.

28. The composition according to claim 23, wherein at least 10 mol% of said units of formula (I) are units of formula (I) wherein A is a sulfo-1,3-phenylene group.

29. The composition according to claim 28, wherein from 10 to 25 mol% of said units of formula (I) are units of formula (I) wherein A is a sulfo-1,3-phenylene group.

30. The composition according to claim 23, wherein said at least one copolyester oligomer has end groups independently chosen from groups of formula (I'):



wherein

- A and n are defined as in claim 23.

31. The composition according to Claim 23, wherein said at least one copolyester oligomer has end groups independently chosen from

-A-CO-OH and

-A-CO-OR

wherein A is defined as in claim 23 and R is a C<sub>1</sub>-C<sub>4</sub> alkyl group.

32. The composition according to claim 23, wherein said at least one copolyester oligomer has a weight-average molecular mass of less than 15,000 polystyrene equivalents, as measured by gel permeation chromatography in dimethylacetamide containing 10<sup>-2</sup> N of LiBr, at 100°C.

33. The composition according to Claim 23, wherein said at least one copolyester oligomer has a weight-average molecular mass ranging from 5000 and 14,000 polystyrene equivalents, as measured by gel permeation chromatography in dimethylacetamide containing 10<sup>-2</sup> N of LiBr, at 100°C.

34. The composition according to Claim 23, wherein said at least one copolyester oligomer has a weight-average molecular mass ranging from 8000 to

10,000 polystyrene equivalents, as measured by gel permeation chromatography in dimethylacetamide containing  $10^{-2}$  N of LiBr, at 100°C.

35. The composition according to Claim 18, wherein said hydrophilic gelling material comprises from 0.5 to 15% by weight of the composition relative to the total weight of the composition.

36. The composition according to Claim 18, wherein said hydrophilic gelling material comprises from 2 to 10% by weight of the composition relative to the total weight of the composition.

37. The composition according to Claim 18, wherein said gel further comprises a fatty phase.

38. The composition according to Claim 37, wherein said fatty phase is chosen from volatile oils, non-volatile oils, and waxes of animal, plant, mineral, and synthetic origin.

39. The composition according to Claim 18, further comprising at least one hair care or hair styling ingredient chosen from fixing materials, conditioning materials, active agents for haircare, sheen-enhancing agents, and hair dyes.

40. A device comprising:



a container containing a composition comprising an aqueous gel which comprises a hydrophilic gelling material, wherein said gel has rheological properties comprising:

- an initial viscosity  $V_0$  ranging from 3000 to 50,000 Pa.s, wherein said initial viscosity  $V_0$  is stable up to a shear strain  $C_1$ ,
- a viscosity  $V_2$  after shear at a strain  $C_2$ , wherein a ratio of  $V_0/V_2$  is greater than or equal to 1000, and
- a difference of  $C_2-C_1$  is less than or equal to 100 Pa, and  
a means for distributing said composition.

41. The device according to Claim 40 wherein said means for distributing said composition is a pump-dispenser.

42. The device according to Claim 41, wherein a maximum value of shear strain  $C_1$  is less than or equal to 150 Pa.

43. The device according to Claim 40, wherein said means for distributing said composition is an aerosol device.

44. The device according to Claim 43, wherein a maximum value of shear strain  $C_1$  is less than or equal to 200 Pa.

45. The device according to Claim 43, wherein said composition further comprises a suitable amount of propellant and wherein said composition is

distributed by means of an appropriate distribution valve system controlled by a distribution head, wherein said distribution head comprises a nozzle which vaporizes said composition.

46. The device according to Claim 45, wherein said propellant is chosen from compressed gas and liquefied gas.

47. The device according to Claim 46, wherein said propellant is chosen from compressed air, carbon dioxide, and nitrogen.

48. The device according to Claim 45, wherein said propellant is chosen from gases which are soluble or insoluble in said composition.

49. The device according to Claim 48, wherein said gases are chosen from dimethyl ether, halogenated hydrocarbons, and non-halogenated hydrocarbons.

50. The device according to Claim 45, wherein said amount of propellant ranges from 20 to 50% by weight relative to the total weight of the composition.

51. A process for cosmetically treating at least one of skin, mucous membranes, hair and superficial body growths, said process comprising applying to said skin, mucous membranes, hair or superficial body growths a composition comprising an aqueous gel which comprises a hydrophilic gelling material, wherein said gel has rheological properties comprising:

- an initial viscosity  $V_0$  ranging from 3000 to 50,000 Pa.s, wherein said initial viscosity  $V_0$  is stable up to a shear strain  $C_1$ ,
- a viscosity  $V_2$  after shear at a strain  $C_2$ , wherein a ratio of  $V_0/V_2$  is greater than or equal to 1000, and
- a difference of  $C_2-C_1$  is less than or equal to 100 Pa.

52. A process for cosmetically treating at least one of skin, mucous membranes, hair and superficial body growths, said process comprising:

applying to said skin, mucous membranes, hair or superficial body growths a composition comprising an aqueous gel which comprises a hydrophilic gelling material, wherein said gel has rheological properties comprising:

- an initial viscosity  $V_0$  ranging from 3000 to 50,000 Pa.s, wherein said initial viscosity  $V_0$  is stable up to a shear strain  $C_1$ ,
- a viscosity  $V_2$  after shear at a strain  $C_2$ , wherein a ratio of  $V_0/V_2$  is greater than or equal to 1000, and
- a difference of  $C_2-C_1$  is less than or equal to 100 Pa,

wherein said composition is applied by means of a device comprising a container containing said composition and a means for distributing said composition.

53. The process according to claim 52, wherein said composition is vaporizable.--

**REMARKS**

Claims 1 to 17 have been canceled and replaced by new claims 18 to 53.

Support for these claims can be found in the original specification and claims.

Applicant has also amended the specification to correct two obvious errors.

First, an oxygen was unintentionally left off both formula (I) on page 4 and formula (I') on page 5 to read "-CO-A-CO-O-(CH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>-" instead of the intended "-CO-A-CO-O-(CH<sub>2</sub>CH<sub>2</sub>O)<sub>n</sub>-. Second, the sodium dimethyl sulphonate recited in Example 1 was unintentionally transcribed as such instead of the intended "sodium dimethyl-isophthalate-5 sulphonate." By the present amendment, Applicant seeks to remedy these mistakes and more precisely describe the invention.

The error in formulas (I) and (I') is apparent from the teachings of the present specification, which describes these compounds as comprising dicarboxylate units. See, e.g., page 4, line 23 and page 28, line 2. One of ordinary skill in the art would recognize that it is not possible to obtain dicarboxylate units absent the missing oxygen. Further, formula (I) is correctly written at page 28, line 3, thus demonstrating further that the errors on pages 4 and 5 are merely typographical.

With respect to the error in Example 1, the mistaken transcription of the term "sodium dimethyl isophthalate-5 sulphonate" is apparent from the positioning of the sulpho group of sulpho 1,3-phenylene and from the disclosure on page 9, lines 3-4,

of the preferred compound "sodium dimethyl 5-oxysulphonylisophthalate." If one looks at the chemical structure of this compound, it is clear that the substituent on the isophthalate ring in the 5-position is in fact sodium dimethyl sulphonate. This accounts for the statement on page 6, lines 2-6, which states that A can preferably be a sodium sulphonate.

Accordingly, both the mistakes and the solutions are obvious to one of ordinary skill in the art. Courts have held that it is not new matter to make a correction to the specification if one skilled in the art would not only appreciate the existence of an error in the specification, but what the error is. See *In re Oda*, 170 U.S.P.Q. 268, 270 (1971) (stating "when the nature of this error is known it is also known how to correct it"). Applicant submits that it would have been obvious to one skilled in the art that sodium dimethyl sulphonate was not correctly recited and that without the oxygen, formula (I) and formula (I') could not contain dicarboxylate units. Applicant further submits that one skilled in the art would also know how to correct the obvious errors, as Applicant has done by the above amendment.

Thus, no new matter has been added by the amendments to the claims or to the specification. Applicant now awaits an action on the merits.

Please charge any additional required fees to our deposit account 06-0916 if necessary.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

By: Thalia V. Warnement  
Thalia V. Warnement  
Reg. No. 39,064

Dated: September 13, 1999

VAPORIZABLE GELLED COMPOSITION

The present invention relates to a novel vaporizable topical composition consisting of an aqueous gel comprising a specific hydrophilic gelling material. The invention also relates to a device consisting of a container containing the above cosmetic composition and a means for distributing the said composition, more particularly a pump-dispenser bottle or an aerosol device.

To prepare aerosols which are vaporizable in all positions, expensive specific devices are currently used, involving complex mechanical solutions such as specific valves or systems of pockets which are relatively impractical to implement.

The Applicant has now found that by using a gel which has a specific rheological profile, it is possible to obtain a gelled composition which can be vaporized by standard pump-dispenser bottle and aerosol equipment in all positions.

Common gelling materials, such as guar gums, the Carbopols® sold by the company Goodrich, Sepigel® 305 sold by the company SEPPIC, or thickeners of latex type, such as the Acrysols® sold by the company Rohm & Haas, or Viscoatex® 538 sold by the company Coatex, give gels which do not have the rheological profile of the gels according to the invention and thus cannot be vaporized.

It is also known practice to use alumina to

obtain vaporizable, so-called "rheofluidizing" gels (WO 94/16808). However, as with all gels of this type described in the prior art, it is necessary to shake the bottle containing the composition vigorously in order to fluidize it and make its vaporization possible.

The gels which have the specific rheological profile according to the invention are a solution to the problems outlined above.

The present invention thus relates to a composition consisting of an aqueous gel comprising a hydrophilic gelling material, the said gel having the following rheological profile:

- an initial viscosity  $V_0$  of between 3000 and 50,000 Pa.s, the said initial viscosity  $V_0$  being stable up to a shear strain  $C_1$ ,
- a viscosity  $V_2$  after shear at a strain  $C_2$  for which the ratio  $V_0/V_2$  is greater than or equal to 1000,
- the difference  $C_2 - C_1$  being less than or equal to 100 Pa.

The gel has an initial viscosity which is stable, i.e. constant at low shear strains, such that the composition can be handled without resulting in a substantial change in its viscosity. This stability of the initial viscosity is expressed by a value of the viscosity of the gel,  $V_1$ , measured at the shear strain  $C_1$  close to  $V_0$ . It is understood that this proximity should be assessed with regard to the fall in viscosity



after shear. Advantageously, the ratio  $V_0/V_1$  is less than or equal to 2.

The shear strain  $C_1$  is characteristic of the force required to obtain fluidization of the gel, in particular allowing its vaporization. This strain  $C_1$  is preferably greater than or equal to 50 Pa. A person skilled in the art will know how to determine the value which this strain should not exceed, as a function of the use which he or she intends to make of the composition according to the invention.

For use in a device allowing its vaporization, the maximum shear strain values  $C_1$  can be illustrated below as a function of the vaporization device.

When the means for distributing the composition according to the invention is a pump-dispenser bottle, the maximum shear strain value  $C_1$  is preferably less than or equal to 150 Pa.

When the means for distributing the composition according to the invention is an aerosol device, the maximum shear strain value  $C_1$  is preferably less than or equal to 200 Pa.

It is understood according to the text hereinabove and hereinbelow that the various viscosity and strain values are measured once the gel has been formed. Before carrying out the viscosity and rheological profile measurements on the gel, it should be ensured that the gel has formed correctly and is

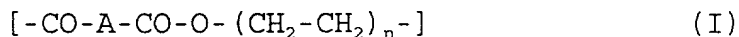
stable. It is thus advisable to wait at least 24 hours after preparation of the gel.

Preferably, the falls in viscosity induced by shear on the gel are not immediately reversible, i.e. the material does not break under high strain and remains homogeneous when it has reached its lowest viscosity.

The hydrophilic gelling material according to the invention consists of any gelling material which can form a gel or a composition having the appearance of a gel and having the rheological profile according to the invention.

According to one preferred embodiment of the invention, the hydrophilic gelling material is a hydrophilic gelling polymer. Hydrophilic gelling polymers which are useful according to the invention are, in particular, sulphone polyesters with a weight-average molecular mass of less than 20,000, preferably less than 15,000.

Such polymers can be, more particularly, water-soluble or water-dispersible terephthalic copolyester oligomers essentially comprising dicarboxylate repeating units of formula (I):



in which

A represents a 1,4-phenylene, sulpho-1,3-phenylene and optionally 1,3-phenylene group,

n ranges from 1 to 4,

at least 35 mol% of the said units of formula (I) being units of formula (I) for which A represents a 1,4-phenylene group and n is equal to 1,

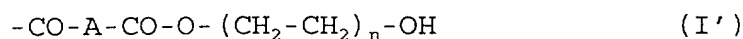
at least 7 mol% of the said units of formula (I) being units of formula (I) for which A represents a sulpho-1,3-phenylene group,

the weight-average molecular mass of the said copolyester oligomers being less than 20,000, preferably less than 15,000.

Preferably, at least 40 mol%, more preferably between 40 and 90 mol%, of the units of formula (I) are units of formula (I) for which A represents a 1,4-phenylene group and n is equal to 1.

Preferably, at least 10 mol%, more preferably between 10 mol% and 25 mol%, of the units of formula (I) are units of formula (I) for which A represents a sulpho-1,3-phenylene group.

The ends of the chains of the said copolyester oligomers can be similar or different and can be represented essentially by the groups of formula (I'):



in which A and n are defined above.

The said oligomers can also have at the chain ends, and in smaller amounts, groups of formulae



in which formulae A is defined above and R represents a

C<sub>1</sub>-C<sub>4</sub> alkyl group.

When A represents a sulpho-1,3-phenylene group, it is more particularly an alkali metal sulphonate, in particular sodium or potassium  
 5 sulphonate, or an ammonium or lower mono-, di-, tri- or tetraalkylammonium sulphonate. According to the invention, the term lower alkylammonium is preferably understood to refer to an ammonium in which the alkyl radical(s) is(are) lower alkyls, preferably C<sub>1</sub>-C<sub>6</sub>  
 10 alkyls. Preferably, it is a sodium sulphonate.

The copolyester oligomer can optionally comprise up to 20 mol%, preferably up to 5 mol%, of units of formula (I) for which A represents a 1,3-phenylene group.

15 According to a preferred embodiment of the invention, the above copolyester oligomer has a weight-average molecular mass of between 5000 and 14,000, more preferably of between 8000 and 10,000.

The weight-average molecular masses are  
 20 measured by gel permeation chromatography in dimethylacetamide containing 10<sup>-2</sup> N of LiBr, at 100°C. The results are expressed in polystyrene equivalents.

The said copolyester oligomers can be obtained by the usual molten-route, solvent-route or  
 25 interface-route processes for preparing polyesters, these processes involving

- esterification reactions of diacids and of diols and polycondensation

- transesterification reactions of diesters and of diols and polycondensation
- autocondensation reactions of hydroxy acids
- Schotten-Baumann reactions using diols and acid chlorides and polycondensation
- polymerization reactions of lactones

while controlling the minimum content of units of formula (I) for which A represents a 1,4-phenylene group and n is equal to 1, which are similar on the basis of the initial stoichiometric ratios of the various monomers and on the basis of the control of the side reactions.

A particularly advantageous mode of preparation is that by molten-route transesterification/polycondensation and/or esterification/polycondensation using a transesterification and/or esterification catalyst.

The control of the structure is obtained by controlling the minimum content of units of formula (I) for which A represents a 1,4-phenylene group and n is equal to 1, which are similar on the basis of the initial stoichiometric ratios of the various diacid and/or diester and diol monomers and on the basis of the use of an etherification-limiting agent, it being possible for this limiting agent to be a basic compound such as aliphatic or aromatic amines, or an alkali-metal or alkaline-earth metal hydroxide or acetate.

The control of the molecular mass is obtained

in a manner which is known to those skilled in the art, by achieving a suitable compromise between pressure, temperature and time.

The novel terephthalic copolyester oligomers  
 5 which form the subject of the invention can be prepared by esterification and/or transesterification/polycondensation of a monomer composition based:

- on terephthalic (Tp) acid, anhydride or diester
- on sulphoisophthalic (SIp) acid, anhydride or  
 10 diester

- optionally on isophthalic (Ip) acid, anhydride or diester, and

- on ethylene glycol (EG)

in relative amounts corresponding to

15 \* an  $(SIp)/[(Tp)+(SIp)+(Ip)]$  molar ratio of at least 7/100, preferably of at least 10/100, most particularly of from 10/100 to 25/100

\* an  $(Ip)/[(Tp)+(SIp)+(Ip)]$  molar ratio of not more than 20/100, preferably of not more than 5/100

20 \* an  $(EG)/[(Tp)+(SIp)+(Ip)]$  molar ratio of from 2/1 to 3/1

in the presence of an esterification and/or transesterification catalyst and an etherification-limiting agent.

25 The terephthalic (Tp) monomer is preferably used in the form of a lower diester (di(C<sub>1</sub>-C<sub>4</sub>)alkyl diester), preferably the dimethyl diester.

The sulphoisophthalic (SIp) monomer is

preferably used in the form of an alkali metal  
sulphonate (in particular sodium sulphonate) of a lower  
(C<sub>1</sub>-C<sub>4</sub> alkyl), preferably methyl, diester. Sodium  
dimethyl 5-oxysulphonylisophthalate may be mentioned  
5 most particularly.

The optional isophthalic (Ip) monomer is  
preferably used in the form of isophthalic acid.

When all of the "diacid" monomers are used in  
the form of diesters, the transesterification  
10 (exchange) operation between these "diacid" monomers  
and ethylene glycol is carried out at a temperature  
above or equal to 130°C, preferably of about 140 to  
220°C and most particularly of about 180 to 220°C; at  
this temperature, the methanol (in the preferred case  
15 of the dimethyl diesters) formed is preferably removed  
from the reaction medium by distillation.

This exchange operation is carried out in the  
presence of a metallic transesterification catalyst and  
an etherification-limiting agent. The said catalyst is  
20 preferably a metal carboxylate, such as manganese  
acetate, zinc acetate, cobalt acetate or calcium  
acetate, or an organic or inorganic titanate such as  
butyl titanate, nitrilo-2,2',2"-triethyl titanate (or  
titanium aminotriethanolate which also acts as  
25 etherification-limiting agent) or calcium titanate. The  
preferred catalysts are the organic titanates; they are  
used in amounts of at least about 0.001% by weight,  
expressed as titanium, preferably from about 0.002% to

0.02% by weight of titanium relative to the weight of reactants present.

The etherification-limiting agent can be a basic compound such as aliphatic or aromatic amines (triethanolamine, guanidine carbonate, dimethylaniline, naphthylamine, etc.) or an alkali-metal or alkaline-earth metal hydroxide or acetate (sodium or potassium acetate, sodium benzoate, etc.). It is generally used in an amount from about 0.001% to 0.05% relative to the weight of reactants present.

The duration of the exchange operation is from 1 to 4 hours; it is generally from about 2 to 3 hours.

When more than 90% of the theoretical amount of methanol has been distilled off, the excess polyol is removed by bringing the temperature of the reaction medium to 230°C.

The polycondensation operation is preferably carried out at a temperature of about 230 to 280°C, preferably of about 240 to 260°C, in another reactor brought beforehand to this temperature and gradually placed under vacuum down to a pressure which may be as low as 10 Pa; a pressure reduction down to about 10 millibar lasts for about 40 minutes.

The polycondensation operation takes place with removal of polyol molecules, this operation being stopped when the motor torque of the stirrer shaft indicates a value equivalent to about 0.5 to



5 newton.metres for a temperature of 250°C of the  
reaction mass and a stirring speed of  
80 revolutions/minute of an anchor-shaped spindle in a  
7.5 litre reactor. The vacuum is then broken with  
5 nitrogen and the polymer is poured into a mould; after  
cooling, the polymer is ground.

When one of the "diacid" monomers is present  
in the form of diacid or anhydride and the other(s)  
is(are) in the form of diester(s), the said copolyester  
10 oligomers are obtained by first carrying out a  
transesterification operation of the diester monomers  
with ethylene glycol under the conditions described  
above, followed by an esterification operation in the  
medium of the diacid or anhydride monomer with ethylene  
15 glycol, and then polycondensation under the conditions  
described above, the total amount of ethylene glycol  
being divided between the two operations  
(transesterification and esterification).

If necessary, the esterification operation is  
20 carried out by adding, to the reaction medium resulting  
from the transesterification operation, monomer in  
diacid or anhydride form and ethylene glycol placed in  
suspension beforehand, at a temperature corresponding  
to that at the end of the exchange; the introduction  
25 period is about 1 hour.

This esterification operation is carried out  
at a temperature of about 230 to 280°C, preferably of  
about 250 to 260°C, in the presence of a catalyst of

the same type as the transesterification catalyst, and an etherification-limiting agent.

The operation is carried out in the presence of the same types of catalyst and of etherification-limiting agent as those used in the transesterification operation, and in the same proportions.

The reaction is carried out with removal of water, which is removed from the reactor at the same time as the excess polyol.

This type of preparation process is described in particular in patent application WO 95/32997 (Rhône-Poulenc Chimie).

Preferably, the composition according to the invention comprises between 0.5 and 15% by weight, relative to the total weight of the composition, of hydrophilic gelling material, more preferably between 2 and 10% by weight.

The composition according to the invention is a cosmetic composition which can be applied to the skin, mucous membranes, the hair or superficial body growths.

The composition according to the invention consists of an aqueous gel which can also comprise a fatty phase. The fatty phase can comprise volatile or non-volatile oils, or waxes which are common in cosmetics, of animal, plant, mineral or synthetic origin; alone or as mixtures, in particular volatile or non-volatile silicone oils, in particular

polysiloxanes. In this case, the fatty phase can be dispersed in the gel, in particular in the form of an emulsion of oil-in-water type. The amount of fatty phase in the compositions according to the invention is preferably less than or equal to 10% by weight relative to the total weight of the composition, more preferably less than or equal to 5% by weight.

The composition according to the invention can comprise additives and/or active agents that are common in cosmetics, it being understood that a person skilled in the art will know how to determine the amounts of these additives and active agents which may be added to the composition according to the invention so as not to adversely affect the rheological profile of the gel constituting it.

The common cosmetic additives are, in particular, fragrances, dyes, odour absorbers, additives for stabilizing the composition, such as preserving agents, UVA and/or UVB screening agents, hydrophilic and/or lipophilic antioxidants, chelating agents, etc. The amounts of these various adjuvants are those used conventionally in the field considered, and, for example, from 0.01 to 5% by weight relative to the total weight of the composition. Depending on their nature, these adjuvants can be introduced into the aqueous phase or into the fatty phase when the composition also comprises a fatty phase.

The composition according to the invention

can also comprise hydrophilic and/or lipophilic active agents that are common in cosmetics, in particular anti-free-radical agents, alpha- or beta-hydroxy acids, UVA and/or UVB screening agents, ceramides, 5 antidandruff agents such as octopirox or zinc pyrithione, antiacne agents such as retinoic acid or benzoyl peroxide, agents for combating hair loss such as minoxidil, antifungal or antiseptic agents, etc. It can also comprise electrolytes, more particularly 10 strontium, magnesium or manganese salts, such as, for example, strontium chloride.

Needless to say, the composition according to the invention will not comprise any constituents liable to impair the specific rheological properties of the 15 aqueous gel constituting it.

The composition according to the invention is preferably a topical, cosmetic or pharmaceutical composition, intended to be applied to the skin, mucous membranes, the hair or superficial body growths.

20 It can be used for all the usual dermocosmetic uses, and in particular as a body hygiene composition, as a hair composition, as a make-up composition or as a care composition. This composition is preferably intended to be applied to the hair.

25 For use as a hair composition, owing to the specific rheological properties of the gel constituting it, the composition according to the invention affords a good styling effect and discipline to the hairstyle.

In order to obtain a fixing effect or to improve the styling and disentangling effect, a fixing material or a conditioning material can be added to the composition according to the invention. These fixing or conditioning materials can be used in amounts of between 0.01 and 15% by weight relative to the total weight of the composition, preferably between 0.1 and 8% by weight.

The composition according to the invention can also comprise haircare active agents and/or sheen-enhancing agents and/or hair dyes. These active agents and/or hair agents can be used in amounts of between 0.01 and 20% by weight relative to the total weight of the composition according to the invention.

The fixing materials which are useful according to the invention consist essentially of at least one fixing polymer, alone or in combination with common cosmetic additives, for example plasticizers, or neutralizing agents. According to the invention, any known fixing polymer per se can be used. It is possible in particular to use a fixing polymer chosen from anionic, cationic, amphoteric and nonionic polymers and mixtures thereof. If necessary, the anionic or amphoteric fixing polymers can be partially or totally neutralized. The neutralizing agents are, for example, sodium hydroxide, potassium hydroxide, 2-amino-2-methyl-1-propanol, monoethanolamine, triethanolamine or triisopropanolamine, and inorganic or organic acids

such as hydrochloric acid or citric acid. The fixing polymers can be used in solubilized form or in the form of dispersions of solid polymer particles.

The cationic fixing polymers which can be  
5 used according to the present invention are preferably chosen from polymers comprising primary, secondary, tertiary and/or quaternary amine groups forming part of the polymer chain or directly connected thereto, and having a molecular weight of between 500 and about  
10 5,000,000 and preferably between 1000 and 3,000,000.

The anionic fixing polymers generally used are polymers comprising groups derived from carboxylic, sulphonic or phosphoric acid and have a weight-average molecular weight of between about 500 and 5,000,000.  
15 Such polymers are described in particular in the patents and patent applications DE 2,330,956, FR 1,222,944, FR 1,564,110, FR 1,580,545, FR 2,198,719, FR 2,265,782, FR 2,265,781, FR 2,350,384, FR 2,357,241, FR 2,439,798, GB 839,805, LU 75370, LU 75371,  
20 US 2,047,398, US 2,723,248, US 2,102,113 and US 4,128,631. They are chosen in particular from the products sold under the names Versicol® E or K by the company Allied Colloid, Amerhold® DR 25 by the company Amerchol, Quadramer® by the company American Cyanamid,  
25 Aristoflex® A, Luviflex® VBM 70, Luvimer® 100 P or MAEX or MAE, Ultrahold® and Ultrahold® Strong by the company BASF, Cosmedia® Polymer HSP 1180 by the company Henkel, Reten® 421, 423 or 425 by the company Hercules;

Acrylidone® LM, Gantrez® AN or ES and Advantage® CP by  
the company ISP, Flexan® 500, Flexan® 130 and Resins  
28-29-30, 26-13-14 or 28-13-10 by the company National  
Starch, Acudyne® 255 by the company Rohm & Haas,  
5 Eudragit® L by the company Rohm Pharma and Stepanhold®  
Extra by the company Stepan, or the crotonic acid/vinyl  
acetate/vinyl t-butylbenzoate copolymer from the  
company Chimex.

The amphoteric fixing polymers which can be  
10 used in accordance with the invention are described in  
particular in the patents FR 1,400,366 and  
US 3,836,537. They are chosen in particular from the  
products referred to by the CTFA (4th edition, 1991)  
name of octylacrylamide/acrylates/butylaminoethyl  
15 methacrylate copolymer and those sold under the names  
Amphomer®, Amphomer® LV 71 or Lovocryl® 47 by the  
company National Starch, Diaformer® Z301 by the company  
Sandoz and Evalsan® by the company Jan Dekker.

The conditioning materials which are useful  
20 according to the invention consist essentially of the  
conditioning materials which are common in cosmetics.  
They are chosen in particular from cationic  
surfactants, anionic or nonionic or cationic or  
amphoteric polymers, proteins, protein hydrolysates,  
25 ceramides, pseudoceramides, fatty acids containing  
linear or branched C<sub>16</sub>-C<sub>40</sub> chains such as  
18-methyleicosanoic acid, and silicones which may be  
linear or branched, organomodified or otherwise,

volatile or non-volatile and soluble or insoluble in the medium, and mixtures thereof.

The conditioners of cationic polymer type which are useful according to the invention can be  
5 chosen from all those already known per se as improving the cosmetic properties of the hair, i.e., in particular, those described in patent applications EP 0,337,354, FR 2,270,846, FR 2,383,660, FR 2,598,611, FR 2,470,596 and FR 2,519,863. Among all the cationic  
10 polymers which can be used in the context of the present invention, it is preferred to use quaternary cellulose ether derivatives such as the products sold under the name JR 400® by the company Union Carbide Corporation, or under the name Celquat® L 200 by the  
15 company National Starch, cyclopolymers, in particular diallyldimethylammonium salt homopolymers and copolymers of diallyldimethylammonium salt and of acrylamide, in particular the chlorides, sold under the names Merquat® 100, Merquat® 550 and Merquat® S by the  
20 company Merck, cationic polysaccharides and more particularly the guar gums modified with 2,3-epoxy-propyltrimethylammonium chloride which are sold, for example, under the name Jaguar C13S® by the company Meyhall.

25 Among the sheen-enhancing agents, mention may be made of non-volatile arylsilicones, in particular polyalkylarylsiloxanes such as the phenylsilicone sold under the name DC 556 by the company Dow Corning, or



diphenyldimethicone sold under the name Mirasil® DPDM by the company Rhône-Poulenc.

Among the hair dyes which may be mentioned in particular are direct dyes. Among those conventionally  
5 used, mention may be made of nitrobenzene dyes, such as nitrophenylenediamines, nitrodiphenylamines, nitroanilines, nitrophenol ethers, nitrophenols or nitropyridines, anthraquinone dyes, monoazo or diazo  
10 dyes, triarylmethane dyes, azine dyes, acridine dyes and xanthene dyes or alternatively metalliferous dyes. These direct dyes, in salified or base form, are generally present in the composition according to the invention in proportions which can range from about 0.001 to about 10%, and preferably from about 0.05 to  
15 about 5%, by weight relative to the total weight of the composition.

The composition according to the invention is preferably intended to be vaporized.

The present invention thus also relates to a  
20 device consisting of a container containing a composition as defined above and a means for distributing the said composition.

According to the invention, a distinction may be made between devices of the pump-dispenser bottle  
25 type, for which the means for distributing the cosmetic composition is a pump, and aerosol devices, for which the cosmetic composition also comprises a suitable amount of propellant, the product being distributed by

means of an appropriate distribution valve system controlled by a distribution head, itself comprising a nozzle via which the aerosol composition is vaporized.

The propellant consists of the compressed or  
5 liquefied gases usually used for the preparation of aerosol compositions. Compressed air, carbon dioxide or nitrogen, or alternatively a gas which is soluble or insoluble in the composition, such as dimethyl ether, halogenated or non-halogenated hydrocarbons and  
10 mixtures thereof, will preferably be used.

The amount of propellant in the cosmetic composition will be sufficient to allow distribution of the composition. It will advantageously be between 20 and 50% by weight relative to the total weight of the  
15 composition.

The present invention also relates to the cosmetic use of a composition as defined above.

Lastly, the invention relates to a cosmetic treatment process for the skin, mucous membranes or  
20 superficial body growths, in which the composition as defined above is applied to the skin, mucous membranes or superficial body growths. The composition is preferably applied by means of the device according to the invention.

25 The examples below illustrate the invention without, however, limiting its scope. The percentages of the constituents in the various compositions in the examples are expressed on a weight basis relative to

the total weight of the composition. The expression "am" means active material.

**Example 1 Preparation of a terephthalic copolyester oligomer**

5           The following reactants are introduced into a 7.5 litre stainless-steel reactor fitted with an anchor-shaped stirrer rotating at 80 rev/min, connected to a Kyowa torsion meter, a jacket for circulating a heat-exchange liquid, and a distillation column

10       controlled by an electrovalve:

- 11.47 mol of dimethyl terephthalate
- 2.53 mol of sodium dimethyl sulphonate
- 39.16 mol of ethylene glycol
- 54 ppm by weight of titanium, in the form of

15       titanium aminotriethanolate as catalyst and etherification-limiting agent.

          The mixture is preheated to 180°C. It is then brought to a temperature of 220°C over about 130 minutes, in order to distil off more than 90% of  
20       the theoretical amount of methanol.

          The reaction mixture is then brought to 230°C over 30 minutes. When the reaction mass has reached this temperature, a suspension having the composition below is introduced over 60 minutes, still at 230°C:

- 25       -
- 0.5 mol of isophthalic acid
  - 2.36 mol of terephthalic acid
  - 8 mol of ethylene glycol.

          The reaction mass is then brought to a

temperature of 250°C over 60 minutes.

During the period of introduction of the mixture and during the period of heating up to 250°C, a mixture of water and ethylene glycol are distilled off  
5 without retrogradation.

The reaction mixture is then transferred into an autoclave preheated to 250°C and is then placed under a reduced pressure of 100 millibar over  
22 minutes. After 2 minutes under these temperature and  
10 pressure conditions, the reaction mass is cast and cooled.

The copolyester obtained has the structural characteristics described in Table 1 in which:

\* "mol% of diacid units" corresponds to the content, in  
15 %, of each diacid or diester used relative to the sum total of diacids or diesters used.

"Tp" means: terephthalic unit

"Ip" means: isophthalic unit

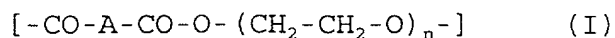
"SIp" means: sulphoisophthalic unit

20 \* The characteristics of the "glycol" part of the copolyesters are obtained by methanolysis of the products at 190°C for 16 hours, followed by analysis by the gas chromatography technique and assaying by internal calibration.

25 - "mol% of diol units" corresponds to the content, in %, of oxyethylene units "G", di(oxyethylene) units "2G", tri(oxyethylene) units "3G" and tetra(oxyethylene) units "4G", relative to the sum

total of diol units.

\* "%GT/ $\Sigma$  units" corresponds to the mol% of units of formula (I)



5 where A is 1,4-phenylene and  $n = 1$

relative to the sum total of units of formula (I)

where A is 1,4-phenylene, sulpho-1,3-phenylene and

optionally 1,3-phenylene and  $n$  ranges from 1 to 4

"%GT/ $\Sigma$  units" is calculated by the following formula:

$$10 \quad \% \text{GT}/\Sigma \text{ units} = (\text{mol\% of Tp units}) \times (\text{mol\% of G units})/100$$

\* The molar mass of the polyesters (Mw) is determined by gel permeation chromatography (GPC) in 100%

DMAc/LiBr, the results being given in polystyrene

15 equivalents.

	mol% of the diacid units	
	Tp	82
	Ip	3
	SIp	15
20	%GT/ $\Sigma$ units	46.5
	mol% of the diol units	
	G	56.8
	2G	30.7
	3G	10
25	4G	2.5
	Mw	8000

**Example 2** Rheological profile of a gel containing 8% of the oligomer of Example 1

An aqueous gel is prepared by mixing

30 together, without heating, 8% of the oligomer of

Example 1 and the remainder to 100% of demineralized

water. The fluid gel obtained is poured into a mould and left to stand for 24 hours. After setting to a solid, the rheological profile of the gel obtained is measured:

5	Initial viscosity $V_0$ :	30,000 Pa.s
	Shear strain $C_1$ :	80 Pa
	Viscosity $V_2$ at a strain $C_2$ of 105 Pa:	30 Pa.s

**Example 3 Styling spray in a pump-dispenser bottle**

10 The procedure of Example 2 is repeated with the following constituents:

Oligomer of Example 1	5% am
PVP/PA (65/35) copolymer	2% am
Water	qs 100%

15 The gel obtained is then packaged in a device consisting of a container and a means of diffusion of pump-dispenser type, sold by the company Coster under the reference MS P 200 Nozzle V06203.

The composition is diffused without  
20 difficulty by vaporization, to be applied onto the hair.

**Example 4 Conditioning spray in a pump-dispenser bottle**

The procedure of Example 2 is repeated with the following constituents:

25	Oligomer of Example 1	5% am
	Polyquaternium 4 (sold under the name Celquat® L200 by the company National Starch)	2% am

Water qs 100%

The gel obtained is then packaged in a device consisting of a container and a means of diffusion of pump-dispenser type, sold by the company Coster under the reference MS P 200 Nozzle V06203.

The composition is diffused without difficulty by vaporization, to be applied onto the hair.

**Example 5 Conditioning spray in a pump-dispenser bottle**

The procedure of Example 2 is repeated with the following constituents:

Oligomer of Example 1	5% am
Polyaminosiloxane (sold under the name DC 939 by the company Dow Corning	2% am
Water	qs 100%

The gel obtained is then packaged in a device consisting of a container and a means of diffusion of pump-dispenser type, sold by the company Coster under the reference MS P 200 Nozzle V06203.

The composition is diffused without difficulty by vaporization, to be applied onto the hair.

**Example 6 Aerosol spray**

The procedure of Example 2 is repeated with the following constituents:

Oligomer of Example 1	5% am
Demineralized water	67%
Dimethyl ether	qs 100%

The gel obtained is then packaged in a device consisting of a container and a means of diffusion of aerosol type, itself consisting of a valve of reference number C21326002 from the company Precision and a push-  
5 button of reference number 31696440AD87 from the company Precision.

The composition is diffused without difficulty by vaporization, to be applied onto the hair.

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CLAIMS

1. Topical composition consisting of an aqueous gel comprising a hydrophilic gelling material, the said gel having the following rheological profile:

- 5 - an initial viscosity  $V_0$  of between 3000 and 50,000 Pa.s, the said initial viscosity  $V_0$  being stable up to a shear strain  $C_1$ ,
- a viscosity  $V_2$  after shear at a strain  $C_2$  for which the ratio  $V_0/V_2$  is greater than or equal to 1000,
- 10 - the difference  $C_2-C_1$  being less than or equal to 100 Pa.

2. Composition according to Claim 1, characterized in that the gel has a viscosity  $V_1$  measured at the shear strain  $C_1$ , the ratio  $V_0/V_1$  being  
15 less than or equal to 2.

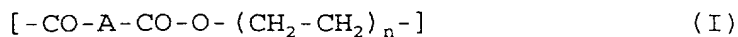
3. Composition according to either of Claims 1 and 2, characterized in that the shear strain  $C_1$  is greater than or equal to 50 Pa.

4. Composition according to one of Claims 1  
20 to 3, characterized in that the falls in viscosity induced by the shear on the gel are not immediately reversible.

5. Composition according to one of Claims 1 to 4, characterized in that the hydrophilic gelling  
25 material is a hydrophilic gelling polymer.

6. Composition according to Claim 5, characterized in that the hydrophilic gelling polymer is a water-soluble or water-dispersible terephthalic

copolyester oligomer essentially comprising  
dicarboxylate repeating units of formula (I):



in which

5           A represents a 1,4-phenylene, sulpho-1,3-phenylene  
and optionally 1,3-phenylene group,

n ranges from 1 to 4,

at least 35 mol%, preferably at least 40 mol%,  
more preferably between 40 and 90 mol% of the said  
10 units of formula (I) being units of formula (I) for  
which A represents a 1,4-phenylene group and n is equal  
to 1,

at least 7 mol%, preferably at least 10 mol%, more  
preferably between 10 and 25 mol% of the said units of  
15 formula (I) being units of formula (I) for which A  
represents a sulpho-1,3-phenylene group,

the weight-average molecular mass of the said  
copolyester oligomer being less than 20,000, preferably  
less than 15,000.

20           7. Composition according to Claim 6,  
characterized in that the copolyester oligomer has a  
weight-average molecular mass of between 5000 and  
14,000, more preferably of between 8000 and 10,000.

8. Composition according to one of Claims 1  
25 to 7, characterized in that it comprises between 0.5  
and 15% by weight, relative to the total weight of the  
composition, of hydrophilic gelling material, more  
preferably between 2 and 10% by weight.

9. Composition according to one of Claims 1 to 8, characterized in that it is a hair composition.

10. Composition according to Claim 9, characterized in that it comprises a fixing material and/or a conditioning material and/or active agents for haircare and/or sheen-enhancing agents and/or hair dyes.

11. Device consisting of a container containing a composition according to one of Claims 1 to 10 and a means for distributing the said composition.

12. Device according to Claim 11, characterized in that the means for distributing the cosmetic composition is a pump-dispenser.

13. Device according to Claim 11, characterized in that the cosmetic composition also comprises a suitable amount of propellant, the product being distributed by means of an appropriate distribution valve system controlled by a distribution head, itself comprising a nozzle via which the aerosol composition is vaporized.

14. Device according to Claim 13, characterized in that the propellant consists of a compressed or liquefied gas chosen in particular from compressed air, carbon dioxide or nitrogen, or alternatively a gas which is soluble or insoluble in the composition, such as dimethyl ether, halogenated or non-halogenated hydrocarbons, and mixtures thereof.

15. Device according to either of Claims 13 and 14, characterized in that the amount of propellant is between 20 and 50% by weight relative to the total weight of the composition.

5 16. Cosmetic treatment process for the skin, mucous membranes or superficial body growths, in which the composition according to one of Claims 1 to 10 is applied to the skin, mucous membranes or superficial body growths.

10 17. Process according to Claim 16, characterized in that the composition is applied by means of a device according to one of Claims 11 to 15.

**Declaration and Power of Attorney for Patent Application****Déclaration et Pouvoir pour Demand de Brevet****French Language Declaration**

En tant que l'inventeur nommé ci-après, je déclare par le présent acte que:

As a below named inventor, I hereby declare that:

Mon domicile, mon adresse postale et ma nationalité sont ceux figurant ci-dessous à côté de mon nom.

My residence, post office address and citizenship are as stated next to my name.

Je crois être le premier inventeur original et unique (si un seul nom est mentionné ci-dessous), ou l'un des premiers co-inventeurs originaux (si plusieurs noms sont mentionnés ci-dessous) de l'objet revendiqué, pour lequel une demande de brevet a été déposée concernant l'invention intitulée

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

VAPORIZABLE GELLED COMPOSITION

et dont la description est fournie ci-joint à moins que la case suivante n'ait été cochée:

the specification of which is attached hereto unless the following box is checked:

a été déposée le \_\_\_\_\_  
sous le numéro de demande des Etats-Unis ou le  
numéro de demande international PCT  
\_\_\_\_\_ et modifiée  
\_\_\_\_\_ (les cas échéant).

☒ was filed on March 4, 1998 as United States  
Application Number or PCT International  
Application Number PCT/FR98/00423 and was  
amended on \_\_\_\_\_ (if applicable).

Je déclare par le présent acte avoir passé en revue et compris le contenu de la description ci-dessus, revendications comprises, telles que modifiées par toute modification dont il aura été fait référence ci-dessus.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above

Je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

**French Language Declaration**

Je revendique par le présent acte avoir la priorité étrangère, en vertu du Titre 35, § 119(a)-(d) ou § 365(b) du Code des Etats-Unis, sur toute demande étrangère de brevet ou certificat d'inventeur ou, en vertu du Titre 35, § 365(a) du même Code, sur toute demande internationale PCT désignant au moins un pays autre que les Etats-Unis et figurant ci-dessous et, en cochant la case, j'ai aussi indiqué ci-dessous toute demande étrangère de brevet, tout certificat d'inventeur ou toute demande internationale PCT ayant une date de dépôt précédant celle de la demande à propos de laquelle une priorité est revendiquée.

Prior foreign application(s)  
Demande(s) de brevet antérieure(s)

Priority Not Claimed  
Droit de priorité non revendiqué

97/03,118                      France  
(Number)                      (Country)  
(Numéro)                      (Pays)

14 March 1997                      ☐  
(Day/Month/Year Filed)  
(Jour/Mois/Anné de dépôt)

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 119(e) du Code des Etats-Unis, de toute demande de brevet provisoire effectuée aux Etats-Unis et figurant ci-dessous.

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

(Application No.)                      (Filing Date)  
(N° de demande)                      (Date de dépôt)

(Application No.)                      (Filing Date)  
(N° de demande)                      (Date de dépôt)

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 120 du Code des Etats-Unis, de toute demande de brevet effectuée aux Etats-Unis, ou en vertu du Titre 35, § 365(c) du même Code, de toute demande internationale PCT désignant les Etats-Unis et figurant ci-dessous et, dans la mesure où l'objet de chacune des revendications de cette demande de brevet n'est pas divulgué dans la demande antérieure américaine ou internationale PCT, en vertu des dispositions du premier paragraphe du Titre 35, § 112 du Code des Etats-Unis, je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations, dont laquelle est devenue disponible entre la date de dépôt de la demande antérieure, et la date de dépôt de la demande nationale ou internationale PCT de la présente demande:

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International Application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International Application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose any or all information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Application No.)                      (Filing Date)  
(N° de demande)                      (Date de dépôt)

(Status) (patented, pending, abandoned)  
(Status) (breveté, en cours d'examen, abandonné)

(Application No.)                      (Filing Date)  
(N° de demande)                      (Date de dépôt)

(Status) (patented, pending, abandoned)  
(Status) (breveté, en cours d'examen, abandonné)

Je déclare par le présent acte que toute déclaration ci-incluse est, à ma connaissance, véridique et que toute déclaration formulée à partir de renseignements ou de suppositions est tenue pour véridique; et de plus, que toutes ces déclarations ont été formulées en sachant que toute fausse déclaration volontaire ou son équivalent est passible d'une amende ou d'une incarcération, ou des deux, en vertu de la Section 1001 du Titre 18 du Code des Etats-Unis, et que de telles déclarations volontairement fausses risquent de compromettre la validité de la demande de brevet ou du brevet délivré à partir de celle-ci.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**French Language Declaration**

**POUVOIRS:** En tant que l'inventeur cité, je désigne par la présente l'(les) avocat(s) et/ou agent(s) suivant(s) pour qu'ils poursuive(nt) la procédure de cette demande de brevet et traite(nt) toute affaire s'y rapportant avec L'Office des brevets et des marques: (mentionner le nom et le numéro d'enregistrement).

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this patent application and transact all business in the Patent and Trademark Office connected therewith: (list name and registration number):

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